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Adrenal Cortex in Surgery

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A great deal of research work has been done on the function of the adrenal gland as a whole. Adrenalin, the secretion of the medulla, has been known and used for years. The function of the cortical portion has remained a mystery. However, we do know a few important facts about the cortex. We know that life in the higher forms cannot exist more than a few hours without the adrenal cortex. It is known that Addisons disease is due to a progressive destruction of the adrenal gland. Research on Adrenalectomized animals has shown definite chemical changes in the blood. There is a lowering of sodium and chlorides and an increase in non-protein nitrogen. This disproportion increases as death nears. Dr. A. Scott Worthim, in his autopsy reports of patients dying from shock, always brought out the fact that there was a state of exhaustion present in the adrenal glands.

Many investigators have maintained adrenalectomized dogs in apparently normal physiologic condition by daily administration of sufficient amounts of extract of adrenal cortex. The symptoms, following the removal of the adrenal glands, are asthenia, falling blood pressure, edema, failing kidney function, anorexia, nausea and vomiting, great physical weakness, profuse cold perspiration, coma and death. The frequency that some of these symptoms are seen following operations has prompted the experimental use of adrenal cortex extracts to prevent shock in surgery and then later to make convalescence more smooth and more rapid.

In 1931, Zwemer reported on the use of adrenal cortex in the treatment of severe intestinal intoxication in babies. The improvement was very marked and almost instantaneous. Wilson, in 1936, reported on the use of adrenal cortex in the treatment of severe burns. Reed has been using adrenal cortex since 1932 in non-surgical patients. He first started using it in surgery in 1936. Since then, he has reported on a large number of cases in which he has used the extract to advantage. Several of his cases were almost moribund, in the last stages of exhaustion from peritonitis. The sudden change in the condition of the patient upon the administration of adrenal cortex extract was very remarkable; they all made a rapid recovery. At the present time, he is using it routinely pre-operatively to prevent shock and to prevent many of the post-operative symptoms, such as vomiting and weakness. My own experience with the extract, covers the past two years. I have used it only on the serious cases where they were obviously in for a stormy time.

In general, the following conditions have been noted when the extract was used:

1. Heart action has been stabilized.
2. It has a very stimulating effect on the kidneys. In several cases the urine has become free of albumin and casts that were present before.
3. No change in the blood chemistry, as long as the extract was given.
4. Blood pressure levels maintained.

5. Pulse rates showed very little change during and after operation.
6. Absence of profuse diaphoresis even to the absence of the usual post-operative period of sweating during the reaction from the anaesthetic.
7. No dehydration.
8. Almost entire absence of nausea and vomiting post-operatively.
9. There has been only one case of ileus in all of my cases.
10. Fluids and solids have been retained earlier and there has been a quick return to the normal appetite.
11. There has been a noticeable feeling of well being. No cases of extreme exhaustion.
12. Wounds have healed more rapidly and there has been a marked noticeable decrease in pain and a less amount of narcotics have been required.
13. There is a definite increase of resistance to infection.

Case Reports

Mr. H. had two operations for perforated ulcer of the stomach, two and one-half years apart. He had a spinal anaesthetic with each operation. With the first operation, he did not have adrenal cortex extract, with the second operation he did. Both operations were performed approximately the same length of time after onset of symptoms. His temperature, following the first operation, reached 103, 24 hours post-operative, and did not reach normal until the seventh post-operative day. With the second operation, the highest temperature was 100.8, and came to normal in 48 hours. The high pulse the first time was 120, which came down to 70 on the eleventh day. The second time, his pulse was 112, and came to 70 in 24 hours. Nausea and vomiting with distension was troublesome the first time. He was unable to retain any solid food until the twelfth post-operative day, while the second operation, he did not vomit once, was not nauseated, and was able to eat solid food on the fourth day. He had his first bowel movement, following the first operation, on the seventh post-operative day, while after the second operation, his bowels moved on the third post-operative day. He was in the hospital 14 days the first time, and 8 days the second time. Following the first operation, he had 27 doses of morphine, ¼ grains, 3,000 c.c. saline, 2,000 c.c. glucose, but after the second operation, he had only 10 doses of morphine, 4,000 c.c. of saline and no glucose. He received 11 doses of adrenal cortex extract. He was given 1 c.c. every six hours after the operation.

My procedure is to give 1 c.c. 12 hours before the operation, 1 c.c. one hour before the operation, and 1 c.c. or 2 c.c. every six hours after the operation until the patient is out of danger.

The preparation I have used, for the past two years, is made by Parke Davis Company, and is marketed under the trade name of Eschatin.

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The Complications of Gonorrhea*

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The complications of gonorrhea are variable and many, and as a rule, these complications are not given the serious consideration which they deserve, but instead, it has been the custom to accept many of these appearances as unavoidable features of the disease itself, as the patient's misfortune, and no one's fault, whereas in reality, a thorough understanding of the disease, and a little time spent with the

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patient at the beginning, explaining the seriousness of this disease, could have well prevented a great many of these complications. Many of these complications are disastrous and far-reaching and for that reason, any steps toward their prevention are well-worth the most painstaking investigation and study in the beginning. It is considered today that more than 50 per cent of the complications of gonorrhea are avoidable conditions, and that gonorrhea on the whole, is the most poorly treated of diseases.

Considering the complications of gonorrhea, we can divide our patients practically into three groups. The first group are those patients whose conduct is above reproach throughout the attack, and who receives oral treatment, a prescription, and syringe, and turned loose to treat themselves. In this group you see most of those complications that are as a rule, not the serious type, but rather either continue with recurrence, or finally become chronic.

In group number two, are patients having extremely mild and local treatment absolutely free from trauma, and of exemplary conduct. Among this group you have those patients who are under the best conditions of treatment, and therefore, where you see the smallest number of complications.

Group number three, are patients receiving strenuous treatment such as passage of catheters, sounds, high-pressure irrigations, injections, solutions being too strong, large doses of gonococcus vaccine, and various types of unwarranted treatment, and also whose conduct is generally bad. In this group you may see any, or all, of the complications expected in this condition, and the variable stages or extent of these same complications. Of course, even in this group itself, some of the complications are a result of the disease itself, as a result of continuity of surface, but by far the greater percentage, are the direct result of what the patient, or the physician, does, and as such are usually preventable.

I shall attempt to take these complications up one at a time, and discuss them as such.

Chronic Gonorrhea: In a consideration of chronic gonorrhea, one must make some very close distinctions, for it is often the custom to include under this condition, what is not really gonorrhea, but instead, conditions that have lingered long after the disappearance of the gonococcus, which may or may not be due to secondary infection, occurring upon the soil previously prepared for their invasion. Chronic gonorrhea should never be classified as such until the gonococcus has been present for more than six months, also, it might be said here that it is very seldom that the chronic gonorrhea is seen in those cases, whose treatment has been exemplary, and whose conduct has been satisfactory.

Gonorrheal Epididymitis: In some groups of treated cases, this complication ranges as high as 30 per cent or more, and since it often renders from 25 to 50 per cent of these patients permanently sterile, it is well worth serious consideration as to its prevention. In the past there has been much discussion and differences of opinion as to the causative factor of epididymitis. Now, it is generally agreed that the usual cause is as follows: That when the bladder is full of urine, or partially distended, a small amount of the urine escapes through the relaxation of the internal sphincter into the posterior urethra, ejaculatory duct, or seminal vesicle, and under physical exertion or lifting, the lower abdominal muscles are brought into action producing an increased bladder pressure, which forces a small amount of urine down the vas deferens, and it eventually reaches the epididymal tube. This is the reason that the history of these complications brings out the fact that within 24 to 48 hours preceding the epididymal complication, that they have indulged in coitus, sexual excitement, or some form of strenuous exercise, with a full bladder. Or that some form of injurious treatment was carried out, which raised the intraurethral or intravesicle pressure, resulting in the infected urine being forced into the vas deferens, and on to the epididymal tube.

Seminal Vesiculitis: There are many conditions wherein this diagnosis is made erroniously, because of the belief that a diseased seminal vesicle is always palpable, and a palpable one is always diseased. To make a definite diagnosis of acute or sub-acute seminal vesiculitis is rather difficult, however on the other hand, to deny that some degree of infec-

tion of the seminal vesicles exists in any case of gonorrhea, is like saying that you have a pyelitis without a kidney infection. Clinically speaking, in those cases where there is a prolonged urethral discharge in patients receiving the proper treatment and having followed the proper conduct, gonorrheal seminal vesiculitis often results in a constant feeding source. With such a condition in the seminal vesicles, with accumulation of purulent material, in the face of a poorly draining organ, especially where there is a certain amount of flare-up from the urethra, with an increased amount of discharge, it is easily seen that the seminal vesicles could be the source of such an infectious condition. Pain in the rectum and along the vas deferens when present, together with a mild grade of fever in the absence of evidence of a prostatic abscess, especially, also, if there is bloody seminal emission, is strongly suggestive of an acute seminal vesiculitis.

Gonorrheal Cowperitis: This condition is fairly well limited to those patients who have had instrumentation of the urethra during the acute or sub-acute stage, and especially in those cases where strictures are present. In other words, this condition is rarely seen in those patients who have had proper treatment, unless there is a stricture formation, or small urethral meatus, or some other condition resulting in an increased back-pressure in the urethra. When present the infection usually breaks through the gland capsule and points towards the perineum, resulting in an abscess formation, which may destroy in whole, or part, Cowper's gland. When such occurs, there is very good possibility of the additional complications of urinary extravasation. In those rare cases where gonorrheal cowperitis does develop without the formation of an abscess, there results a very chronic condition because of the poor drainage facilities and the prolonged gonorrheal infection that remains.

One of the best methods to diagnose this condition is by placing the gloved finger into the rectum and pressing into the fossa the thumb externally to the corresponding side of the bulb, and rolling the tissue between the thumb and finger. The enlarged glands can readily be palpated.

Gonorrheal Arthritis: Gonorrheal arthritis rarely occurs in the absence of some form of trauma to the infected mucous membranes. Its appearance may be made after meatotomy, passage of a sound, opening of an infected gland, or any other procedure that may serve to introduce the gonococcus into the blood stream. On the other hand, those poorly behaved individuals who subject themselves to traumatic influences in the presence of an active infection of the urethra, tend to support this theory. This is perhaps the most damaging of all complications of gonorrhea, occurring in about two to five per cent of all cases, and is extremely resistant to treatment. It may present itself at any time during the attack, more frequently however, during the acute or sub-acute stages. The pathology is variable and in many instances it may confine itself to one joint, more frequently being polyarticular, which may often offer a differential diagnosis from the commoner forms of rheumatic fever. It is, also, to be remembered that the degree of fever is not in proportion to the intensity of the local involvement. The disease is often periarticular, and extends along the tendon sheaths. This form is probably the least common, and thought by some authorities to be due to the gonorrheal toxins, rather than the actual presence of the organism at the site. A simple effusion in the joint is sometimes noted, and in the absence of the gonococci, rarely becomes purulent. The most severe forms are those in which the actual presence of the organism are in the joints, with exudate and pus formation involving and destroying the synovial membrane of the articular surfaces and eventually ending in ankylosis. We have seen the clinical courses characterized by the great variability of the condition, and its obstinacy to therapeutic measures. In some cases the involvement is transitory, in others ending in variable degrees of ankylosis. Concerning the treatment of this obstinate condition, of course, the force of the attack should be the focus of infection, the same with urethral, prostatic and seminal vesicular gonorrhea.

Periurethritis or Spongyitis: Here there is a varying degree of infiltration of the corpus spongiosum, greatly limiting its distensibility. Because of this, there is great pain on erection, and in the presence

of extreme infiltration, there is a definite downward curve of the organ, which is commonly referred to as cordee. Along with this condition, you have the development of periurethreal abscesses, which if allowed to go untreated, may rupture either externally or internally, the former of which often results in sinuses which may harbor the gonococci almost indefinitely, and be an important etiological factor in the production of chronic gonorrhea.

Lymphangitis: This condition is characterized by the presence of small indurated cords, which may be felt running longitudinally in the subcutanious tissue of the penis. There is generally an associated edema of the distal areolar tissue. It seldom causes any great amount of trouble, if the original infection is treated properly. The disection of these indurated cords has been suggested by some authors, but it is well to state that unless you have had some experience or are prepared as to what the possibilities may be, difficulties may be encountered, because of the fact that these cords sometimes run deep into the perineum.

Follicular Abscess: When infiltrations around the urethral follicles undergo suppuration, they show a decided tendency to point towards the skin surface. It is well to incise these fairly early instead of waiting until they reach the skin to point, as such reduction may be avoided and possibility of sinus formation prevented. Also, following the incision of these abscesses, all active treatment should be discontinued otherwise it will greatly enhance formation of a permanent urethral sinus.

Suppurative Tysonitis: Infection of the paraphrenal glands results in this condition, which often go on to abscess formation. As soon as these form, they should immediately be incised and drained, and if possible, every effort made to keep up the drainage until healing. Otherwise, a mucous channel will be left, which will harbor the gonococci for many months, which will result in numerous recurrences, and probably, chronic gonorrhea. After drainage has ceased, fulgaration of these glands is suggested by some authors, in order to more completely destroy any gonococci that may be left.

Prostatic Abscess: Infection of some degree in the prostate is certain to occur whenever the posterior urethra is involved. The prostate may have become infected unknown to both patient and doctor even though its condition has been continually looked for throughout the course of the case. Differentiation between acute prostatitis and prostatic abscess of gonorrheal origin often is very difficult, particularly in the early stages. Urinary discomfort, frequency, and urgency, terminal hematuria, difficulty, even complete retention may occur with either. They may run a febrile or afebrile course and usually both show some degree of leukocystosis. In each, the prostate may be swollen, hot and tender on palpation but as a rule the diagnostic feature of prostatic abscess is the area of fluctuation together with high temperature and sudden onset of chills. Also, the intense rectal pain is more common with gonorrheal abscesses. The acute prostatic abscess complicating gonorrhea is entirely different from the more common sub-acute or chronic pyogenic abscess. This differentiation is usually brought out by the findings of complete examination and history.

Removal of Spleen Controls Purpura

Blood transfusions and snake venom are temporarily helpful, and the removal of the spleen controls most cases of chronic thrombopenic purpura (tendency to easy bleeding due to the decrease in number of certain type of blood cell), Nathan Rosenthal, M.D., New York, states in The Journal of the American Medical Association for January 14.

There are many causes of purpura, some of which are measles, scarlet fever, chickenpox, infections of the respiratory tract and drug idiosyncrasy. However, in most cases the causative factor cannot be determined.

The condition is either acute or chronic, and the symptoms may be mild or severe in either type. Recovery is often spontaneous in the acute cases.

Some of the means suggested for the treatment of purpura include vitamin C, sesame oil, liver extract, parathyroid extract, X-ray radiation and ligation of the artery of the spleen.

Famed German Professor Retires

Having reached the age of 65, Prof. Otfried Forster has retired from the chair of neurology and psychiatry at Breslau University, the regular Berlin correspondent of The Journal of the American Medical Association reports in the January 14 issue. Through his basic research in anatomy and physiology as well as in the pathology of the nervous system, Forster has gained for himself an illustrious name. Neurosurgery likewise is much in his debt. The intradural resection of the dorsal nerve roots, for abolishment of spastic paralysis and tabetic crises, is known as Forster's operation; it was done by him as early as 1909. In 1935 Forster was awarded a British prize, the Jackson gold medal.

Diagnosis and Treatment of Gall Bladder Disease*

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The gall bladder is an organ which has been generally poorly understood. Many symptom complexes related to the gall bladder still persist after a removal of the gall bladder.

In presenting this paper a study of the physiology of the gall bladder is a help in giving a clearer concept in the treatment and prognosis of gall bladder disease. The gall bladder is controlled through the vagus nerve and the sympathetic nervous system. These nerves also supply the sphincter of Odii at the duodenum. The sphincter of Odii is supplied also by the Auerbach plexus. Hence, an irritation in the duodenum can cause a reflex action in the gall bladder. The common duct and pancreatic duct empty into the duodenum in its second part at the Ampulla of Vater.

DIAGNOSTIC MEASURES

I. Cholecystogram:

Since the advent of the gall bladder dye administration, we have gained much knowledge about the gall bladder. The following terms are used in describing or interpreting the cholecystogram.

1. Normal emptying.
2. Faint visualization.
3. Delayed visualization.
4. No visualization.
5. No emptying.

II. Biliary tract drainage:

The non-surgical drainage of the gall bladder is a diagnostic measure of value. The tube should be taken in the morning following a 12-hour fast. The tube should be passed in the sitting position. Water should not be given to pass the tube in the stomach. To determine if tube is in the duodenum or stomach: (1) Stomach contents will be turbid, duodenal contents will be clear, homogenous. (2) Blow air into tube by small syringe. If it returns immediately the tube is in the duodenum. (3) Fluoroscope. (4) Congo red reaction. The acid reaction of gastric contents (turns red to blue) disappears after entering the duodenum.

After the tube has passed into the duodenum usually one to two ounces of golden yellow bile is obtained. After the bile flow has ceased, one ounce of MgSO4 (25 per cent solution) is injected and allowed to remain two minutes. After which the MgSO4 solution is siphoned off and the returning MgSO4 is discarded. The MgSO4 may be repeated for two more injections. If no concentrated dark brown or olive green bile is obtained, one ounce of warm olive oil is injected and allowed to remain 10 minutes and the returning oil discarded.

The gross findings of biliary drainage:

1. Concentrated bile.
2. Absence of dark green bile usually indication of non-functioning gall bladder.
3. Bile sediments.

The microscopical findings of the biliary drainage:

1. Cholesterol crystals are thin plates colorless with nick in one corner.
   (a) Usually indicates stones.
2. Calcium bilirubinate crystals are lumps of heavy plates with yellow, orange, or red color.
   (a) Nearly 100 per cent diagnostic of stones.
3. Calcium crystals, are irregular, colorless and transparent.
   (a) Of no significance.

III. Chemical tests of blood. The most used tests are:

1. Cholesterol — Normal, 150-180 mgs per 100 c.c.
   (a) Elevation of blood Cholesterol; Hypercholesterolemia is usually associated with stones.
2. Cholesterol Esters — Normal, 80-120 mgs per 100 c.c. usually 50 per cent

*Read before the Southern Oklahoma Medical Association Meeting, at Ardmore, December, 1936.

of cholesterol. Drops to 5 to 10 per cent in liver damage.

3. Icterus Index — Normal value, 4-8. Reading 8-10 suggests gall bladder disease.
4. Van Den Berg.
   (a) Direct reaction, positive of common duct obstruction as 200 mgs per 100 c.c.
   (b) Indirect reaction, indicates hemolytic type of jaundice.
5. Bromsulphthalein.
   (a) Positive without jaundice, indicates portal Cirrhosis, cancer metastasis, or chronic passive congestion.
   (b) Positive with jaundice indicates either obstruction or catarrhal jaundice.

Classification of Gall Bladder Diseases According To Symptoms

I-II. Indefinite abdominal symptoms. Indigestion, distention, belching of gas, nausea, discomfort after meals, constipation with no acute attacks of pain.

III - III-A. One or more acute attacks of upper right quadrant pain such as colic, with typical radiation at times requiring hypodermics with or without nausea, vomiting or fever.

Types of Gall Bladders:

I. These patients have symptoms of gall bladder disease without a history of colic and without stones. The symptoms namely are epigastric distress, flatulence, nausea, tenderness over gall bladder.

Clinical findings: X-ray shows:

A. Faint visualization or delayed emptying or failure to empty.
B. Duodenal drainage shows crystalline sediment.
   1. Concentrated bile in which crystals of calcium, cholesterol or calcium bilirubinate are present.
C. Negative X-ray and examination of other parts of abdominal cavity.

Treatment:

A. Duodenal drainage.
B. Antispasmodics.
C. Bromides.
D. Hydrochloric acid or alkalies.
E. Saline cathartics or olive oil.

II. These patients have symptoms of gall bladder disease without a history of colic but with a stone. The symptoms are as mentioned in Type I.

This type due to stasis of bile in the gall bladder. There is a normal sphincter tone but a deficient response to stimulation, hence, atony and dilitation of the gall bladder. The stasis of bile causes the stone. The stone forms gradually and there is only one stone. The other types with stones will have numerous families because of numerous attacks. This type will eventually contract down. This type of gall bladder you will find in fair, fat and 40. There is no history of colic.

Clinical findings:

A. Gastric hypochlohydria.
B. X-ray shows:
   1. Dilated gall bladder with faint visualization.
   2. Incomplete emptying of gall bladder.
   3. Gall bladder does or does not show stone.
C. Icterus Index normal.
D. Cholesterol crystals in biliary sediment.

Treatment:

1. Dilute HCL.
2. Bland diet to promote emptying of gall bladder.
3. Olive oil before meals for drainage of gall bladder.
4. Strychnine is given to increase muscle tone.
5. Removal of the gall bladder is advocated because of mechanical menace of stone.

III. These patients give a history of right upper quadrant pain such as colic with typical radiation at times with or without nausea, vomiting and fever. There are two subdivisions under this type.

A. The hyptertonic individual with hyperacidity. This type is found at middle age. In women it disappears at the climateric. This gall bladder disturbance is caused by local duodenal irritation as duodenitis. The spasm produces a spasm of the sphincter of Odii. Diagnosis is made of duodenitis.—(1) X-ray, (2) Will have trouble getting tube in duo-

denum, (3) MgSO4 injected into tube will bring no drainage, (4) Olive oil will promote drainage. This type will not get relief after gall bladder removal because pain is not due to stone but to acute duodenitis.

Clinical findings:

1. Duodenal drainage shows dark bile with cholesterol crystals because bile is stagnant.
2. Gastric hyperacidity.
3. Enlarged gall bladder shadow at X-ray.
4. Delayed emptying of gall bladder at X-ray.
5. Gall bladder may not visualize.
6. Response to olive oil but not to MgSO4 at biliary drainage.
7. Periodic increase of the Icterus Index.

Treatment:

1. Bland ulcer diet as Sippy.
2. Antispasmodics as tincture Belladonna.
3. Alkalies are indicated to combat the gastric hyperacidity.
4. Olive oil is given before meals.
5. Duodenal drainage will give relief.
6. If stones are present operate because of the mechanical menace from stones.

III-A. Hypertonic type without hyperacidity.

This type of gall bladder is due to reflex disturbances. A stimulation of the Vagus as neurosis, worry, nervousness, chronic appendicitis, colitis, infected tubes, etc., can cause reflex stimulation. There will be violent contractions of the gall bladder giving periodic attacks of colic or indigestion. The mechanism is produced by an increased tone of the sphincter of Odii, by a reflex of stimulation from the C.N.S.

Clinical findings:

1. Gastric acidity is normal.
2. There is no duodenitis.
3. X-ray shows normal emptying gall bladder.
4. X-ray may or may not show stones depending upon stage of formation.
5. Drainage response to both MgSO4 and olive oil.
6. There is stasis in gall bladder as noted by crystalline biliary sediment.
7. Icterus index normal.

Treatment:

1. Removal of exciting cause as foci of infection.
2. Bromides or some sedative for nervous factor.
3. Antispasmodics.
4. Bland diet.
5. Respond to duodenal drainage or saline cathartics.
6. Removal of gall bladder if stones are present.

MANAGEMENT OF GALL BLADDER DISEASE

I. Avoid biliary stasis.
   A. General hygenic measures.
      1. Regularity of meals.
      2. Rest after meals.
      3. Outdoor exercise, deep breathing.
      4. Avoidance of constipation.
      5. Eliminate worry and nervousness.

II. Prevention and treatment of inflammation:
   1. Bed rest.
   2. Bland diet.
   3. Remove foci of infection.

III. Dietary regulation:
   1. Bland type of diet.
   2. Frequent small meals for gall bladder drainage.
   3. Control of weight.
   4. Low cholesterol diet when Hypercholesterolemia is present.
   5. High cholesterol diet for stimulating gall bladder emptying, when not contraindicated.

IV. Medications:
   1. Sedatives such as bromides, etc.
   2. Antispasmodics as tincture Belladonna.
   3. Hydrochloric acid or alkalies.
   4. Saline cathartics.
   5. Cholagogues.
   6. Duodenal drainage.

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Think of It First*

Some Comments on the Diagnosis of Tuberculosis

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In the years to come there shall probably be less ado over the diagnosis of tuberculosis. With the declining morbidity, our diagnostic approach is assuming a more aggressive character. We now attempt to detect tuberculosis in the pre-clinical stage. This means diagnosing the disease by the case finding method. This is being done by surveys in this state, most of which has been done by the State Tuberculosis Association under Dr. Puckett. The State Health Department's new mobile X-ray unit is extending this survey work. Incidentally, Oklahoma ranks high as regards the volume of tuberculin testing done, thanks to Dr. Puckett. Not long ago we were content to pick the disease up by physical examination and an occasional X-ray film. Today our aim is to diligently search out the positive reactors and then protect them, if possible, from further infection. If clinical tuberculosis is found, then active treatment is instituted. The time will probably come when all positive reactors will be registered and their infection followed from childhood. When such a day does come, the diagnosis of the few cases of tuberculosis then encountered will not be such a problem. For the present, however, we still must be on our toes to avoid overlooking clinical tuberculosis.

Let us consider somewhat informally some of the occasions when tuberculosis should be before our mind when examining the patient. While taking the history, always consider the possibility of tuberculosis when a story of exposure is given, especially family contact. Also, don't overlook coughing relatives with so-called bronchitis. Always think of it first when a patient gives a history of repeated or protracted colds or recurrent attacks of the "flu." Keep it in mind when the patient tells of exposure to irritant dust. A very high percentage of silicotics develop tuberculosis. We might also recall that patients who shop around nursing an old diagnosis of tuberculosis rarely have clinical tuberculosis.

As to symptoms, think of it first when your patient complains of fatigue. This tiredness recalls the ill localized malaise of the early hypertensive. Pain and cough are seldom mentioned. Your patient complaining of persistent chest pain, unless it is a typical pleurisy pain, often has arthritis. The patient, with cough as a prominent symptom, rarely has early tuberculosis. Of course, there are some doctors who carry this idea a little too far. One sees patients coughing their heads off with advanced tuberculosis who have been diagnosed typhoid fever. Don't neglect the patient who seems genuinely fatigued and probably has lost a little weight. A slight temperature elevation is, of course, always suggestive.

Keep in mind, though, that the so-called fevers of unknown origin are rarely due to pulmonary tuberculosis. Here it is important to use your agglutination tests. Think of it first in patients with pleurisy or shoulder ache in the absence of acute respiratory infection. When a pleural effusion is present, treat as tuberculosis.

Likewise, a patient spitting blood is to be considered guilty until proven otherwise. Don't be guilty yourself of glibly assigning such bleeding to the upper respiratory tract as so often is done. Hemorrhage from this region is quite rare except for nose bleeds which usually can be easily spotted. Blood from the stomach is ordinarily in large clots. Blood from the lungs is mixed with mucus and 90 per cent of the time it is due to tuberculosis. The most common causes of streaking are bronchiectasis and bronchitis. Blood spitting of obscure origin, especially in young individuals, always demands prolonged ob-

*Presented before the Post Graduate Course on Tuberculosis in Oklahoma City, October 13, 1937.

servation. The hemoptysis occurring in mitral stenosis is not infrequently ascribed to tuberculosis. Patients are inclined to exaggerate when telling about the amount of blood raised. Quiz them carefully. The typical hemoptysis ("tossing the ruby"), of tuberculosis is about one ounce or more followed by blood streaked sputum for several days.

In physical examination, think of it when you encounter a chest exhibiting asymmetry such as a slight lag on one side or a slight wasting on one side. Tuberculosis is a disease which produces asymmetry. Unfortunately, the stethoscope plays a very minor role in diagnosing the early lesion. Of course, think of it first when moderately coarse post cough rales are heard above the third rib and fourth dorsal spine—the so-called zone of alarm. On the other hand, rales in the lower lobes may be considered as non-tuberculous until proven otherwise. Rhonchi almost always indicate a non-tuberculous lung condition, such as asthmatic bronchitis. However, remember that tuberculosis co-exists with other diseases. When sputum is raised, always have it examined for tubercle bacilli. Club fingers usually point away from tuberculosis to other forms of chronic lung suppuration. Always think of it when anal fistula is encountered. Old scars of tuberculous adenitis are significant.

Next we come to laboratory aids. Repeated negative sputum examinations in the presence of a purulent sputum usually serves to rule out tuberculosis. Often we see relatives and doctors who are reluctant to give up a diagnosis of tuberculosis in the presence of a chronic productive cough such as occurs in bronchiectasis. Tuberculosis is no longer a universal disease, so use the tuberculin test on adults as well as children. Think of it whether the test is four plus or one plus. The fluoroscope is a fine routine but use it cautiously. An early lesion can be easily overlooked. Always take a chest film when any doubt exists. I feel that the fluoroscope is adequate in children under 12 years. We are inclined to over interpret the X-ray, i.e., see things that are not really present. Our chief concern should be the outer and upper third of the lung fields. Fine and moderately coarse mottling in this region means to think of it first. Chronic upper respiratory tract infection causes thickening about the hilus and along the descending bronchial trunks, which is confused with tuberculosis. Don't get too excited about healed primary complexes in persons over 30. When in doubt as to activity, always insist on serial films. Bronchoscopy and lipiodol mapping of the lung fields are important diagnostic aids. Use them especially in obscure lower lobe disease.

The pulmonary conditions which I have found most frequently misdiagnosed as tuberculosis have been bronchitis (usually with emphysema), bronchiectasis and lung abscess. The extra pulmonary conditions so diagnosed have been heart disease, malaria, syphilis and hyperthyroidism. I have not found disease of the paranasal sinuses per se quite as frequently misdiagnosed as others report. A difficult task sometimes is to tell whether or not a case of pneumoconiosis has an associated tuberculosis. Repeated sputum examinations help. The bronchomycoses are difficult to diagnose but fortunately, they are rare. Primary cancer of the lung is on the increase and it seems that errors in its diagnosis are also on the increase. An X-ray diagnosis is very hazardous. Bronchoscope your patient. If a pleural effusion develops, do a guinea pig even though the fluid is hemorrhagic.

Keep in mind that many of the things I have mentioned are merely diagnostic aids and not dogma or infallible truths. In concluding, let me remind you that to "Think of It First" is an excellent habit. By so doing you are bound to pick up an occasional early case of tuberculosis, which is still considered somewhat of a minor triumph in medicine.

"Depression or No Depression"

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Further Study of Lobar Pneumonia in the Tulsa Area

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A statistical study of the pneumonias relative to the incidence of lobar pneumonia in the Tulsa area during the period from 1930 to 1937 revealed some interesting data. The results of this study in a series of 721 pneumonias was given in two previous papers, one read before the Tulsa Clinical Society in June of 1936, and one read before the Oklahoma State Medical Association in May, 1937. This study showed that prior to 1935 the incidence of lobar pneumonia was rather low. In the period from 1930 to 1935, it constituted but 10.6 per cent of the total number of pneumonias. In the period from January, 1935, to May, 1936, it constituted 25.5 per cent of the total number. From May 1, 1936, to May 1, 1937, it constituted a maximum of 46.8 per cent of the total number of pneumonias. The latter was based on a survey of 109 cases of pneumonia admitted into St. John's Hospital in that year.

Thus, it is seen that in the period from 1930 to 1937 there had been a decided increase in the incidence of lobar pneumonia.

From May, 1937, to May, 1938, there was a decided fall in the total number of pneumonias and a slight decrease in the incidence of lobar and atypical pneumococcus pneumonia admitted into the hospital. The number of pneumococcus pneumonia cases made up 45.3 per cent of the total.

The importance of the pneumonia problem, both from a public health and economic standpoint can be appreciated from the fact that among the infectious diseases, pneumonia out-ranks all others as a cause of death. In 1936 the death rate in the United States was 69.8 per 100,000 population as compared to 54.2 per 100,000 due to tuberculosis. The mortality rate has increased at a rather disturbing rate since 1932.

According to the United States Bureau of Vital Statistics, the death rate per 100,000 population in Oklahoma, from pneumonias other than broncho-pneumonia, increased from 38 in 1932 to 55.9 in 1936. The broncho-pneumonia mortality increased from 25.8 in 1932 to 35.6 in 1936 per 100,000 population. The total pneumonia mortality rate in Oklahoma during the year of 1936 was 91.5 per 100,000 population and was second only to heart disease among all other diseases as cause of death.

TABLE No. I

Survey of 569 Pneumonia Cases
From January 1, 1935, to May 1, 1938

	January 1, 1935 to May 1, 1936 — Morningside Hospital and St. John's Hospital			May 1, 1936 to May 1, 1938 — St. John's Hospital		
	Cases	%	Mortality	Cases	%	Mortality
Lobar & Atypical Pneumococcus Pneumonia	136	34.4	25.5	81	46.8	29.6%
Broncho Pneumonia	260	65.6	25.9	92	53.2	32.6%
Combined Total	396		25.6	173		31.2%

Average days ill before entering hospital—4.5

TABLE No. II

Analysis of 81 Lobar and Atypical Pneumococcus Pneumonia Admitted to St. John's Hospital From May 1, 1936, to May 1, 1938

AGE GROUP		MONTHS	
Less than 1 year	4	January	11
1 to 4 years	5	February	23
5 to 9 years	8	March	10
10 to 19 years	9	April	3
20 to 29 years	11	May	7
30 to 39 years	11	June	3
40 to 49 years	10	July	1
50 to 59 years	9	August	2
60 to 69 years	4	September	0
70 to — years	10	October	6
SEX		November	4
Male	49	December	11
Female	32		

Onset preceded by upper respiratory infection	50
Onset not preceded by upper respiratory infection	20
Unknown	11

Onset sudden	51
Onset gradual	22
Unknown	8

While it may seem fundamental to review the various phases of lobar pneumonia, I believe it is of the utmost importance that certain aspects of the disease be clearly understood in order to obtain the best results, particularly with specific treatment. In this connection it is significant that 96 per cent of lobar pneumonias and about 50 per cent of broncho-pneumonias in adults are caused by one of the various types of pneumococci. Of these, Types Nos. I, II, III, IV, V, VI, VII, VIII, XIV cause 89 per cent of the pneumococcus pneumonias. At the present time specific sera are commercially available for all the above individual types. In view of the above statements, it is clearly evident that we should be concerned more with the necessity of making a bacteriological diagnosis rather than an anatomical one.

In this series of cases the age group, sex, and seasonal incidence coincide with those found in various other localities. The role of the common cold as a predisposing factor in lobar pneumonia should not be overlooked. It is to be noted that 61 per cent were preceded by acute respiratory infections. Since at the present time no satisfactory protective antigen against pneu-

TABLE No. III

Symptoms and Physical Findings

Previous Attacks	9
No Previous Attacks	28
Unknown	44

SYMPTOMS		PHYSICAL FINDINGS	
Fever	73	Rales	60
Cough	68	Dullness	48
Pain in chest	55	Broncho-vesicular breathing	54
Chill	38	Limited expansion	32
Blood streaked sputum	26	Increased fremitus	13
Dyspnea	21	Cyanosis	7
Aching	6	Distant breath sounds	6
Nausea	8	Right side	44
Vomiting	8	Left side	17
Anorexia	5	Both sides	13
Abdominal pain	4	No record as to side	4
No record	1	Friction rub	3
		No record of physical examination	3

monia has been developed, it becomes our duty as physicians not to minimize the common cold and to consider all acute respiratory infections as potential pneumonias.

The diagnosis of lobar pneumonia with a typical explosive onset, most often seen with Type I and II is usually not difficult. However, an early diagnosis in an atypical case with inconspicuous onset, variable presenting symptoms, and physical signs may be rather difficult. It is with this group that diagnosis is often deferred, resulting in an unfavorable condition and a doubtful outcome of the disease. Since early and adequate specific treatment is the important factor in a given case of pneumococcus pneumonia regardless of its seeming mildness, it is necessary that we employ all available facilities to make an early diagnosis. Aside from the clinical findings these consist of laboratory aids such as sputum typing, blood culture, leucocyte, and differential count, and roentgenograms of the chest.

The symptoms of chill or chilliness, fever, cough, pain in the chest, accelerated respiration, with expectoration of blood tinged sputum, without clinical evidence of consolidation are sufficient to make a tentative diagnosis of pneumococcus pneumonia. In cases with an atypical onset, acceleration of the respiration with a change in the respiration to pulse rate ratio may furnish valuable information of an underlying pneumonic process. A change in the normal pulse to respiratory rate ratio of 4 to 1 to a rate of 3 or 2 to 1 is one of the most common findings early in the course of a pneumonia. Other early physical signs such as slight cyanosis, intensification of the whispered voice sounds, suppressed breath sounds, limited respiratory excursion, and occasional crepitant rales over a localized area may be present and are of considerable diagnostic importance. Evidence of consolidation, which may not be elicited until the third or fifth day, particularly in centrally located lesions, is not necessary for the diagnosis of lobar pneumonia. Much valuable time may be lost in waiting until consolidation is manifested. In this connection it has been our routine to have roentgenograms made on every patient who enters the hospital with suggestive acute respiratory symptoms. X-ray evidence of consolidation is often superior to p h y s i c a l findings in detecting early lesions. These lesions may be visualized within the first 24 hours.

Typing of the sputum should be done as early as possible in order to determine the

TABLE No. IV

Laboratory Findings

WHITE BLOOD COUNT		PER CENT NEUTROPHILS	
5-10	8	50-59	1
11-15	20	60-70	0
16-20	30	71-80	9
21-30	14	81-90	38
31-40	5	91-100	30
41-50	1	Unknown	3
Unknown	3		

SPUTUM EXAMINATION			
Sputum examined	62	Group B	4
Sputum not examined	19	Group C	2
Sputum negative	4	Group D	6
Type I	14	Group E	3
Type II	7	Group F	1
Type V	4	Group G	2
Type VII	8	Group H	1
		Other pneumonia Morphology	6

ROENTGENOLOGICAL EXAMINATION	
Bronchial Pneumonia	13
Lobar Pneumonia	26
Influenzal Pneumonia	3
Pleuritis	11
Abscess	2
Fluid	10
Not X-rayed	32

etiological organism. Rapid pneumococcus typing by the Neufeld reaction as advocated by Sabin is a simple and very accurate procedure. It depends on the fact that a swelling of the pneumococcus capsule occurs when the pneumococcus is mixed with a homologous type of rabbit antiserum. It is definitely type specific.

Since the pneumococci of the higher types are frequently found in normal mouths, the question, as to their etiological relationship to the existing pneumonia might be raised. In a small percentage of cases there may be no relationship. Bullowa, however, has shown in a large series of cases that in a pneumonia patient the type of organism found in the patient's sputum corresponded in 93 per cent of the instances to the type found in the lungs.

It has been our custom to have the sputum retyped when members of the higher types are reported in the initial sputum examinations.

That physicians have become "type conscious" is evident from the fact that in 1935 less than 50 per cent of the sputums were examined or typed; that from May 1, 1936, to May 1, 1937, 76 per cent were typed. From May 1, 1937, to May 1, 1938, 76.5 per cent were examined or typed. These figures were taken from the records of pneumonia patients in St. John's Hospital.

Leucocytosis with an increase in the percentage of the neutrophils is almost always a constant finding in lobar pneumonia. Counts up to 40,000 per cubic millimeter with the neutrophils composing from 80 to 90 per cent of the total number of cells is not infrequent. Counts below 10,000 indicate a poor prognosis. I wish to again stress the value of routine blood culture. Despite the significance of bacteremia as the factor in recovery, and as a guide to adequate serum dosage, it is regrettable that so few requests for blood culture have been made. The incidence of bacteremia apparently increased with age and also increases the mortality rate from three to five-fold. Even with serum treatment the mortality rate is high. In a series of bacteremic cases of the Massachusetts Study the mortality rate in Type I, treated with serum within the first four days, was 28.6 per cent as compared to a mortality rate of 8.2 per cent in the non-bacteremic cases. In Type II the mortality rate in the bacteremic cases treated with serum was 46.8 per cent as compared to a mortality rate of 15 per cent in the non-bacteremic cases. Bacteremia occurs in about one-fourth of Type I cases and in about one-third of Type II. Cases with positive blood cultures demand maximum serum dosage.

The vast amount of evidence which has been accumulated relative to the efficacy of specific serum leaves no doubt as to its therapeutic value in pneumococcus pneumonia. The results of serum treatment in a large series of cases gathered from the literature show that the mortality rate in Type I has been reduced from about 25 per cent in the non-serum treated cases to less than 10 per cent. In Type II the mortality rate has been decreased from about 43 per cent in the non-serum treated cases to about 22.5 per cent in the serum treated cases. Available data, as to the efficacy of rabbit antiserum in Type III pneumonias, which have a mortality rate of about 50 per cent is insufficient to draw any definite conclusion. The results obtained in Types V, VII, VIII, XIV treated with serum parallels the results obtained in serum treated Type I cases.

As shown by various investigators the importance of early serum treatment cannot be over emphasized. The results obtained depend upon a definite time relationship to the onset of the disease. According to Cole in a series of 462 patients with Type I pneumonia treated with serum within the first three days the mortality rate was 4.8 per cent, on the fourth day it was 8.2 per cent, on the fifth day it was 8.6 per cent, and after the fifth day it was 19.5 per cent. Bullowa reported a mortality rate of 8.8 per cent in a series of cases treated with serum before the fifth day. Cecil reported a mortality rate of five per cent in the cases which were treated with serum on the first day. Horsfall and his co-workers have recently treated a number of pneumococcus pneumonia with rabbit antisera. The results have been remarkable in that their mortality rate was but 3.7 per cent. The advantages of rabbit serum over horse serum are that the small molecule to which the antibody is attached is much less likely to produce dangerous reactions; that in the rabbit the antibody is more easily and rapidly developed to a much higher titer; that the

cost is considerable less due to the fact that concentration of the serum is not required.

Before serum is administered it is necessary to test the patient for sensitivity. It is obvious that patients who are sensitive to horse serum or who develop asthma or vasomotor rhinitis when exposed to horse emanations should not receive horse serum even by testing. In the cases of using horse serum the conjunctival and intradermal tests with diluted normal horse serum are performed.

Since practically all persons show a positive skin reaction to rabbit serum, Horsfall adopted the method of blood pressure and heart rate variations to determine sensitivity. If, within a period of five minutes after an intravenous injection of .01 c.c. to .05 c.c. of normal rabbit serum diluted with 5 c.c. of physiological salt solution, there is a fall in the blood pressure of 15 millimeters or more and there is an increase in the cardiac rate of 15 or more, it denotes that the patient is sensitive.

Serum should always be given slowly intravenously and in divided doses. The initial dosage of serum according to the Massachusetts program is from 60,000 to 100,000 units. This initial dosage is doubled, if: (1) Treatment is begun after the third day of the disease. (2) The patient is over 40 years of age. (3) The patient is pregnant or in the first week of the puerperium. (4) There is involvement of more than one lobe. (5) Bacteremia is present. Additional doses of 40,000 to 60,000 units at intervals of three or four hours are recommended, if, in any case: (1) The temperature does not fall below 102 degrees by rectum within 18 hours after beginning serum treatment. (2) If the temperature rises again after having fallen below 102 degrees Fahrenheit by rectum. (3) Bacteremia is demonstrated by blood culture regardless of the clinical course. (4) There is evidence of a spreading lesion.

Conclusions

1. The importance of pneumonia with particular reference to the pneumococcic group as an economic and public health problem is emphasized.

2. An analytical study of 81 cases of pneumococcic pneumonia from May, 1936, to the present date, showing age, sex, seasonal incidences, symptoms, physical signs, laboratory findings, and mortality rate is presented.

3. The necessity of early diagnosis from the standpoint of symptoms and laboratory aids such as sputum typing, blood culture, blood counts, roentgenograms of the chest; and the importance of an etiological rather than an anatomical diagnosis are stressed.

4. The results of specific serum treatment in the various types of pneumococcic pneumonia in a large series of cases gathered from the literature are given. Initial serum dosage and the outline of serum treatment are set forth as advocated by the Massachusetts Pneumonia Study.

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Functional Hearing Test

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Of all the special senses, I am sure we will agree that sight is the most important, hearing second. Partial loss of the sense of hearing in the child, especially of school age, is unfortunate. Practically all education is acquired either by seeing or by hearing. The child who is unable to hear all that is said to him is frequently looked upon by the teacher, pupils, and even the parents as being mentally deficient. The adult with partial or complete loss of the sense of hearing is put to great

disadvantage in his business and social activities, much more so than in years past. The age we are now living in is highly competitive, requiring all our facilities to meet this competition.

We as Otologists haven't much to boast about, for there are entirely too many people, both children and adults, deficient in their ability to hear. This fact places a great responsibility upon us. What can be done about it? If there is any branch of medicine that should be preventive rather than curative, it is Otology. We all know too well that permanent loss of hearing is much more common than a loss which can be relieved. We, like the Occulists who prescribe glasses, may prescribe hearing aids; but the Occulist's patient will wear glasses with ease and comfort, while our patient will object seriously to wearing a hearing instrument, and, in many cases, rightly so. Not until we know just the instrument to prescribe and can write a prescription for it to be filled by a recognized institution, will we have gone far in this direction. At present, these instruments are sold mainly on a commercial basis.

If we are to accomplish much, it seems that it must be through education. When I say education, I do not mean education for the public alone, but for the medical profession as well.

Before the depression, the public was becoming more and more educated to the necessity of periodic examinations. Many of them came in regularly, either annually or semi-annually, for these examinations. But what about the ears? Were they examined by a competent man? The examiner was often an internist, a pediatrician, or a general practitioner whose equipment usually consisted of an otoscope and a watch. He would make a superficial examination, not sufficient to detect beginning deafness which might be corrected with little effort. But it was not detected, and the condition gradually grew worse until the subject was advised by his family or business associates that he was becoming deaf. Then he consulted the otologist with an advanced case of deafness, when there was little that could be done.

In recent years the public has paid less attention to these periodic examinations, and must be re-educated as to their value. They must also be taught that these checkups are not only a saving of physical facilities, but a saving of money—not a scheme advanced by the medical profession for financial gain. We are not free from blame, for frequently we do not find this beginning deafness, the reason often being the fact that we do not follow a definite routine of examination. This is the one point which I wish to stress in this paper, "Functional Hearing Test."

I shall of necessity discuss tests used which you all know, but, if I may insist upon your adoption of a step-by-step method of examination, I shall feel that my time has been well spent. Before beginning an examination, one should have a complete history—that of the family, past history and present condition of the patient, with the beginning and progress of the complaint. One should also have a general physical examination. An otologist can no more practice within himself than a part of a machine can operate without its companion parts. We must have the cooperation of the medical men in order to learn much which we cannot know without their help.

The examination of the ear should be made in a noiseless room. This is almost impossible in the city where traffic is heavy. Most of us do not have a soundproof room, but must compromise by using the quietest room we have for hearing examinations.

The equipment used in these examinations may include all the instruments known. It makes very little difference. One may make a very accurate estimation of hearing with his voice and two or three tuning forks, while another may have all the instruments at his command and make a very poor estimation. Thorough knowledge of the test used and its interpretation is necessary. What is normal hearing? Unfortunately we have no standard. The pulse, blood pressure, metabolic rate, etc., have no different standards, but are considered normal when found within certain limits. So we may take our own ear, if it is good, and be almost as definite as we could be with standards.

The object of the hearing tests is to find whether the ear is normal. If not, how much loss of hearing there is; and which parts are causing the loss must be de-

termined. Deafness is divided into two types, depending upon the part responsible for such loss; namely, conductive and perceptive. Conductive deafness is caused by some interference with the parts which conduct the waves of vibration to the inner ear. These parts are the external canal, tympanic membrane, ossicles, middle ear, and eustachian tube. Perceptive deafness is caused by some disease or condition interfering with the receiving of vibrations to the cochlea, organ of Corti, the eighth nerve, or the center within the brain.

The instruments used in testing the hearing function are the watch, the voice (both conversational and whispering), several tuning forks and the audiometer. I am not including a few of the instruments commonly used. One of the oldest tests is the watch test. It has been used since the beginning of the 16th century. In years gone by the watch had a more uniform tick than the modern watch, which has a wide variation in pitch and volume. For use as an office record this is still a very good test, but, in comparison with other examinations, it is of little value. In making the test, one must know his watch; that is, how many inches it can be heard from the ear. Each ear should be tested separately, holding the watch farther away from the ear than it can normally be heard and approaching the ear until the patient indicates that he hears the first tick. Although this is a very good test, the watch with its one high frequency is of little importance if used alone.

The voice tests are very important, for in most cases, a conversational range is the thing we are most interested in. One should have a space of 30 feet between patient and examiner. Few of our offices have this much space, so the test is done at 15 feet with the proximal ear closed tightly, not by the patient, but by the doctor's assistant to make sure that the ear is really closed. One may use names of cities, objects, etc., but in my own work I use the simple numerals between one and ten. Many use double numerals, but it seems to me that the single numerals are more e-a-s-i-l-y handled at a definite frequency. These numerals should be spoken in an ordinary conversational tone. Much practice is required to become proficient. If the patient hears these numerals and can repeat them after the examiner, we say that his hearing is normal; but, if he should not hear the numerals, he should be approached slowly until he is able to repeat them. The number of feet multiplied by two should be your numerator, 30 the denominator. The whispered voice test is done in the same way except six feet is the distance used from the patient to the examiner. The examiner stands back of or by the side of the patient, again using numerals. If the patient repeats these numerals, we should consider his hearing normal. For the whispering voice, if you do not approach the patient as before, note the number of feet from which he can detect your whispering voice. The result will be a repetition of the spoken voice test except that the denominator will be six.

Now we have done three tests: the watch with a high frequency, the conversational voice, and the whispered voice with a medium frequency. We now have a fair idea of the patient's ability to hear, but we have not found whether we are dealing with a conductive or a perceptive deafness. The following tests are made for this purpose.

The selection of tuning forks is very important. First, the size should be neither too large nor too small. If too large, they are awkward to use; and, if too small, they are also inconvenient. I should say that the size should be from eight to ten inches at most. Medium forks should be weighted in order that we may produce a true tone. The number depends upon your other equipment. If you are going to use the forks in conjunction with an audiometer, one or two forks are sufficient; but, if you are going to depend upon forks alone, you should have at least five (a 64, 256, 512, 1048, and a 2096). These forks will take in all the range that is ordinarily used. In exciting the forks, all kinds of methods have been suggested. It makes little difference which method you use as long as you use the same method every time and become fairly accurate in doing so. One will never get an accurate test if one strikes the fork against anything which is most handy. If you use a pleximéter all well and good; but use it every time in exactly the same way. I let the tine of the fork fall from a perpendicular

to a horizontal position, striking my wrist. I use this method every time. My 64 fork has a 22 vibrating time, my 128 fork has a 28 vibrating time, and so on, each fork having a definite vibrating time. By using these five forks and knowing their vibrating time, one may make a log similar to the one used with the audiometer and make a very accurate test even to percentages.

The fork tests as used by most men are three in number; namely, the Schwabach, the Weber, and the Rinne. These tests are not used to determine ability to hear, but to locate the part or parts involved if there is deafness present. Even with these tests, one can determine the groups of parts responsible; that is, they indicate whether we are dealing with a conductive deafness or a perceptive deafness. We cannot tell by giving tests whether the trouble is due to a tympanic membrane, eustachian tube, or any other particular part. The same is true of conductive deafness.

The Schwabach test is used in many ways, but I think one of the most common methods of testing is the use of a 128 or 256 fork set in vibration. The handle is placed to the forehead vortex or over the mastoid, the patient indicating when he or she no longer hears the tone. Then the fork is placed on the examiner's head, the same location being used. If the patient hears the vibration longer than the examiner, we say that the patient has a prolonged bone conduction, and, if a shorter time, that he has a bone conduction of short duration. The former indicates a conductive deafness; the latter shows a perceptive deafness.

The Weber test is a lateralization test. One must be very careful in interpreting this procedure as most patients think the vibrations should be heard more loudly in the good ear. The test is performed by setting a 256 fork into vibration and placing it on the forehead, the patient indicating the ear by which the vibrations are heard most distinctly. If the vibrations are heard louder in the good ear, perceptive deafness of the opposite ear is shown; but, if heard louder in the bad ear, conductive deafness is probably present. This is not universally true. If the patient says that the vibrations are louder in the bad ear, there must be some obstruction in the middle ear, the tympanic membrane, or the external canal to deflect the vibrations toward the inner ear. Therefore, in interpreting the findings, one must keep this fact in mind.

The Rinne test is a comparison of bone conduction and air conduction. Air conduction is about twice as long as bone conduction. The same fork or forks are used as are used in the other tests. The handle of the fork is placed over the mastoid process, and the patient tells the examiner when he can no longer hear the vibrations. The tines are then brought before the ear, and the patient makes known the point at which the vibrations are no longer heard. As I have said before, the ratio should be two to one. If there is a long bone conduction, conductive deafness is shown. Should there be a short bone conduction as compared to air conduction, perceptive deafness is present. When one has done these tests and has properly interpreted them, a fairly accurate diagnosis may be made as to the type of deafness one is dealing with.

Some years ago, an instrument was perfected to measure rather accurately the ability to hear. This instrument, called the audiometer, has a frequency starting as low as 32 and reaching a height of 20,000 vibrations per second. In former years, the audiometer, because of its price, was almost prohibitive for the average otologist. In the last few years, the price has been reduced until it is within the range of every man doing ear work. This instrument is not a diagnostic instrument, but is used to determine the amount of hearing. It is especially useful in determining whether progress is being made, and, if so, how much. In compensation work where a patient may claim loss of hearing as a result of accident, it is possible to measure accurately the actual loss and to have the findings compare favorably with those of other men using like instruments.

After compiling the results of all these tests, and having a complete history and physical examination, one may arrive at a very accurate diagnosis. However, let me again insist upon the importance of using a systematic routine of making examinations.

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Local news of possible interest to the medical profession, notes on removals, changes of addresses, births, deaths and weddings will be gratefully received.

Advertising of articles, drugs or compounds unapproved by the Council on Pharmacy of the A. M. A., will not be accepted.

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EDITORIAL

ANNUAL MEETING

Arrangements are practically complete for the Annual Meeting, to be held at the Skirvin Hotel, Oklahoma City, May 1, 2, 3. The various local Chairmen have been appointed by Dr. L. J. Starry, and are properly functioning. Three of our Guest Speakers have already accepted an invitation to be present and are Doctors Wayne Babcock of Philadelphia; J. F. Hamilton, Campbell's Clinic, Memphis; and Edw. N. Smith, Oklahoma City, Instructor in Post Graduate work in Obstetrics. We also expect there will be a representative from the American Medical Association headquarters; however, as yet we do not know who this will be.

With the new assembly rooms that have been completed at the Skirvin Hotel we will have ample and commodious space for all Sections; the spaces for technical exhibits has practically all been taken.

The Oklahoma City physicians and surgeons are arranging for Clinics on Monday, May 1, at the various hospitals. The program of these Clinics will be published in the next issue of the Journal along with the entire program of the Annual Meeting.

We are looking forward to the usual good presentations in the Section meetings and all in all the prospects bid fair to be one of the best meetings in the history of the Association.

MEMBERSHIP DUES

The Roster of members of the State Association must be completed before the Annual Meeting, to be held May 1, 2, 3, as a membership card is necessary for registration.

It is also important that the dues be paid promptly in order that certification of membership may be made to the American Medical Association as membership in the A.M.A. will not be accepted until such certification. As the National meeting is to be held May 15th it is important that the dues be paid so that those desiring may obtain their Fellowship card before the meeting.

We wish to call attention to the fact that the payment of dues has been very slow this year and if the program, as outlined by the House of Delegates at their last meeting, is to be carried out it will be necessary that the funds be supplied and they are only supplied by the payment of dues.

Your prompt attention to this matter of paying dues is very important.

REVISION OF CONSTITUTION AND BY-LAWS

The House of Delegates at the Annual Meeting in 1937 appointed a Committee for the revision of the Constitution and By-Laws, composed of Drs. L. H. Ritzhaupt, Guthrie, C. P. Bondurant, Medical Arts Bldg., Oklahoma City, and E. Albert Aisenstadt, Picher Hospital, Picher, Oklahoma. This Committee is now busy making this revision and they ask that members who have suggestions to offer communicate

with them immediately as they are desirous of receiving from all members interested, information, guidance, and recommendations so that the revised Constitution, when submitted for final passage, will represent the ultimate desire of a cross section of the largest majority of our membership, and will thereby assure passage without unnecessary controversy at the next annual meeting.

You may address any suggestions to any one of the above named Committee.

THE ANNUAL EARLY DIAGNOSTIC CAMPAIGN

Ordinarily, finding disease early is up to the p h y s i c i a n s. But in tuberculosis there is a difference, for the patient has it in an active, transmissable stage, months to years before he has any symptoms that suggest going to his doctor. Queries and Minor Notes of the Journal of the American Medical Association say that in the average case diagnosis may be made two and one-half years before the patient feels any symptoms whatever. For this reason the efforts of physicians must largely be linked with that of other citizens in making people tuberculosis conscious, so they will do their part to find out their own condition as a routine, or at least be alert when the possibility of tuberculosis occurs.

The National Tuberculosis Association has published and is distributing the April issue of "Tuberculosis Abstracts," preliminary to the annual nationwide Early Diagnosis Campaign conducted in April each year. The slogan this year is in the nature of an appeal to all the citizenship, "Help Find Early Tuberculosis."

A second catch phrase of this campaign is: "Eight out of Ten Who Come to the Sanatorium are ADVANCED Cases." The thoughtless might blame this situation on the medical profession. But the fact that most cases are advanced before they go to their doctors takes most of the blame away, if there be any. However, the medical profession should not be content to do nothing about it. Certainly an alibi is not what physicians usually seek. It is a part of the creed to meet public responsibilities. In doing so with tuberculosis a great service is rendered in solution of a problem of society. Of course we may be disposed to ease up on public service since the medical profession has been kicked around a good deal of late. But the best answer to that is obvious service, and nothing can be more impressive than a definite reduction in tuberculosis.

We suggest that you read this "Tuberculosis Abstract." County medical societies should join in observance of the Early Diagnosis Campaign by having a paper or discussion on tuberculosis. The Oklahoma Tuberculosis and Health Association, 22 N.W. 6th St., Oklahoma City, will furnish material helpful in preparation of papers. The new Diagnostic Standards is available on request of any physician in the state. The National Tuberculosis Association has an excellent sound moving picture for physicians called "Diagnostic Procedures." The State Association can obtain this in 16 mm. for a rental of $1.00, plus return postage. If your medical society can arrange for a picture machine a showing of this picture, 20 minutes, will make a fine addition to your program.

We urge physicians to be alert to the possibility of tuberculosis, both for the sake of their patients and to speed up the eradication of this disease; for it will be conquered as a part of the onward progress of medical science.

DEAN UNIVERSITY OF TEXAS SCHOOL OF MEDICINE

Dr. John W. Spies, for the past three years director of the Tata Memorial Hospital in Bombay, India, and an internationally known authority on the study and treatment of cancer, has been appointed dean of the University of Texas School of Medicine, located at Galveston. His appointment was effective November 10. He replaces as dean Dr. W. S. Carter, retired. Dr. Spies will also serve as professor of preventive medicine and hygiene.

A native Texan and an academic graduate of the University of Texas, Dr. Spies has spent the last 20 years studying, practicing and teaching medicine in this country and in Belgium, Germany, China and India. He graduated in medicine at Harvard University in 1924. He received the degree of master of science from Yale University in 1930. Dr. Spies served as interne at St. Luke's hospital in New York City,

which was followed by a residency and clinical fellowship at the Memorial Hospital in New York City. He has twice held fellowships under the auspices of the American-Belgian Foundation at the University of Louvain.

During the academic years of 1929-1931 he was instructor in surgery and pathology at the Yale University School of Medicine and in the summer of 1930 he served as surgical assistant in the University of Berlin. From 1931 to 1935 he held the position of associate professor of surgery and head of the tumor clinic in the Peking Union Medical College which was established and is maintained in China by the Rockefeller Foundation. From 1935 to 1938 he was director of the Tata Memorial Hospital which was founded in Bombay, India, by the Sir Dorabji Tata Foundation to promote the study and treatment of cancer.

Dr. Spies is a member of the American Board of Radiology, the American Association of Pathologists and Bacteriologists, the American Radium Society, the American Association for Cancer Research, the Chinese Medical Association, the Indian Surgical Association, the Royal College of Surgeons and Physicians in England, and Sigma Xi, honorary scientific fraternity. He is holder of the certificate of the National Board of Medical Examiners of the United States, which is the only organization in this country affiliated with similar European Boards and which entitles the holder to practice in practically all of the States of the Union.

Dr. Spies has had an unusually extensive experience in first-hand visits to important educational institutions in North America, Europe, and the Orient. He has published numerous articles pertaining to investigations in various fields of medicine.

His brother, Dr. Tom D. Spies, is professor of medicine at the University of Cincinnati and has recently done very important work in connection with pellagra.

For the fifth consecutive year, the psychiatric staff of the Menninger Clinic, Topeka, Kansas, will offer a week's postgraduate course in Neuropsychiatry in General Practice, April 17-22. This practical presentation of dynamic psychiatry through lectures and case presentations has been attended by physicians from 19 states in the past four years. Enrollment is limited to 30. Address inquiries to Dr. Robert P. Knight, Chairman.

Editorial Notes—Personal and General

DR. and MRS NED BURLESON and sons of Prague, are spending the winter in New Orleans, where Dr. Burleson is taking postgraduate work at Tulane University.

DR. W. H. NEWLIN, Sallisaw, has been appointed as County Health Superintendent of Sequoyah County.

DR. D. E. LITTLE, Eufaula, has been appointed County Health Superintendent of McIntosh County.

DR. J. W. FRANCIS, Perry, has been appointed County Health Superintendent of Noble County.

News of the County Medical Societies

PITTSBURG County Medical Society met February 17th with Doctors A. R. Sugg and E. M. Gullatt, of Ada, as their guest speakers. Their subjects were "Perinephretic Pathology" and "Empyema" respectively.

MUSKOGEE County Medical Society met February 6, with Dr. A. Ray Wiley, Tulsa, and Dr. V. K. Allen, Oklahoma City, as their guests. They spoke on "The Relation of Endocrines to Neoplasma of the Breast" and "Individual Technique in Ano-Rectal Surgery," respectively.

OBITUARIES

DOCTOR JOHN M. WELLS

Dr. John M. Wells (Dec. 14, 1875-Jan. 25, 1939) was born in Livingston, Tenn., December 14, 1875. He was married in 1905 to Miss Jeanette McNabb at Aurora, Mo. Was graduated from Vanderbilt University at Nashville in 1909. Doctor Wells had Post Graduate work from Northwestern University, Chicago, Tulane University, New Orleans and Vanderbilt University. After graduation he moved to Newby community south of Bristow, Okla., where he engaged in private practice until 1915 when he moved to Bristow and had lived there ever since. He became associated in 1926 with the Bristow Clinic and was a member of the staff until March, 1936, when he resumed private practice. Dr. Wells was a member of the Masonic and Odd Fellows lodges, of the Creek County Medical Association and the Presbyterian Church. He was a past president of the local Rotary Club.

He is survived by the widow, two sons, one daughter and four grandchildren. Milton K. Wells, U. S. Vice Consul, Lima, Peru, Raymond P. Wells, Jefferson City, Mo., and Mrs. Jack Carman, Bristow, Okla. He also leaves one brother, Dr. M. H. Wells, Watertown, Tenn.

Dr. Wells died of pneumonia and a heart ailment. Burial was in Oak Crest Memorial Park, Bristow, Okla.

DR. CHARLES B. BARKER

Born in Niobe, New York, February 27, 1884.

Graduated from Loyola University Medical College, Chicago, Ill., 1912. Internship at Illinois Charitable Eye and Ear Infirmary, Chicago.

Came to Guthrie, 1913.

Married to Dr. Pauline Quillin, 1914, with whom he operated eye, ear, nose and throat clinic.

In 1925 took as their associate Dr. Wm. C. Miller.

Took courses in ophthalmology and otolaryngology in Vienna, 1927, and Egypt, 1932.

Member American Medical Association, Oklahoma State Medical Association, Logan County Medical Society, Kansas City Society of Ophthalmology and Otolaryngology. In 1923 passed American Board of Otolaryngology. In 1930 received Fellowship in American College of Surgeons.

Died February 12, 1939, at St. Anthony Hospital, Oklahoma City, of streptococcus septicemia.

DOCTOR ARTHUR E. HALE

RESOLUTION:

At a recent meeting of the Woods-Alfalfa County Medical Society the following resolution was enacted:

WHEREAS, our fellow member and esteemed co-worker, Dr. Arthur E. Hale, has been called by the Great Physician, and

WHEREAS, for many years he was a prominent and active member of our Society and our profession, and

WHEREAS, his professional achievements as a specialist in eye, ear, nose and throat work has made him recognized by the doctors of these counties and his state, as one of the most beloved members of the medical profession,

THEREFORE Be It Resolved by the Woods-Alfalfa County Medical Society that we record our sadness, and in his untimely going we hold in memory his splendid skill and wonderful personality as a professional man, one who was always generous in his services to the poor, an active civic leader, a prominent Boy Scout worker and above all a gentleman of the first rank, and

BE IT FURTHER RESOLVED that a copy of these resolutions be made a part of the minutes of this meeting, and a copy be sent to the members of the family and that a copy be published in the Journal of the Oklahoma State Medical Association and local newspapers.

Signed: Woods-Alfalfa Medical Society,
C. A. Traverse,
L. T. Lancaster, Committee.

RECENT DEATHS
(Insufficient Data for Obituaries)

Dr. Chas. B. Barker, Guthrie, January, 1939.
Dr. J. P. Bartley, Duncan, February, 1939.
Dr. Ross D. Long, Oklahoma City, January, 1939.
Dr. S. M. Meredith, Vinita, January, 1939.
Dr. J. P. Nelson, Beggs, February, 1939.
Dr. A. G. Wainright, Tulsa, January, 1939.
Dr. J. M. Wells, Bristow, January, 1939.

Foundation Prize

The American Association of Obstetricians, Gynecologists and Abdominal Surgeons announces that the annual Foundation Prize for this year will be $100.00. Those eligible include only (1) interns, residents, or graduate students in Obstetrics, Gynecology and Abdominal Surgery, and (2) physicians (M.D. degree) who are actually practicing or teaching Obstetrics, Gynecology or Abdominal Surgery.

Competing manuscripts must (1) be presented in **triplicate** under a nom-de-plume to the Secretary of the Association before June 1st, (2) be limited to 5,000 words and such illustrations as are necessary for a clear exposition of the thesis, and (3) be typewritten (double-spaced) on one side of the sheets, with ample margins.

The successful thesis must be presented at the next annual (September) meeting of the Association, without expense to the Association and in conformity with its regulations.

For further details, address Dr. James R. Bloss, Secretary, 418 11th Street, Huntington, W. Va.

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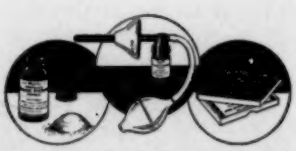

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ABSTRACTS : REVIEWS : COMMENTS *and* CORRESPONDENCE

SURGERY AND GYNECOLOGY

Abstracts, Reviews and Comments from
LeRoy Long Clinic
714 Medical Arts Building, Oklahoma City

Surgery for Ulcerative Colitis: Fred W. Rankin, M.D., Sc.D., F.A.C.S.; Surgery, Gynecology and Obstetrics; February 15, 1939; Vol. 68, No. 2A, page 306.

This disease of the large bowel is characterized pathologically by ulcerations, abscesses, and scars, and clinically by a syndrome associated with diarrhea, blood and pus in the stool, violent febrile reaction, prostration and weakness followed by periods of remission and with a proneness to multiple complications. Many names have been given to this ailment. It seems probable that American surgeons have been discussing a different pathological entity from continental surgeons when they speak of "chronic ulcerative colitis." This probably explains the divergent opinions on the etiology, pathology, and particularly the treatment of this not uncommon disease.

The typical clinical course, along with sigmoidoscopic and roentgenographic evidence, accurately establishes the diagnosis.

Medical management of chronic ulcerative colitis, which consists of a dietary regime, administration of vitamin C, elimination of focal infection, and the use of vaccines and serum, is effectual in most of the cases to a certain degree. Intractability to medical treatment with resulting damage of considerable extent to the colon, from which follows its loss of function and under which conditions the colon becomes filled with pus and detritus and is a source of absorption, is the principal indication for surgery.

In the author's opinion, surgery for chronic ulcerative colitis (as for duodenal ulcer) is indicated only for the complications which occur in about 15 per cent of the cases. These complications, except for hemorrhage and perforation, occur mostly in the chronic, intractable stages of the disease and fall readily into several classifications: (1) perforation, abscess formation, and hemorrhage usually occurring during the acute stages; (2) polyposis; (3) cancer developing on polyposis; (4) visceral degenerative changes; (5) unique complications such as erythemia nodosum, pyodermia gangrenosa, liver abscess, gastro-jejunocolic fistula, etc.; (6) evidences of focal infection, the lead-pipe colon filled with pus furnishing the source, as in arthritis; and (7) rectal complications such as stricture, fissure, peri-anal abscess, etc.

These complications, depending upon their distribution, the extension of the disease, and the acuteness or chronicity of the disease in each individual case, are indications for surgery of various types. The distribution is of particular importance because in 80 per cent of chronic ulcerative colitis cases as diagnoses by X-ray, the involvement of the large bowel is very extensive, being beyond the rectosigmoid juncture. In the experience of the author regional or segmental ulcerative colitis occurs very infrequently, the usual experience being that the disease has involved a major portion of the large bowel.

The operative procedures usually employed are: (1) colostomy; (2) ileostomy; (3) segmental resection by exteriorization; (4) subtotal colectomy following ileosigmoidostomy; and (5) subtotal or total colectomy following ileostomy.

Dr. Rankin's conclusions are as follows:

"1. Surgery in ulcerative colitis is indicated only for complications. These complications occur, first, as rectal or perirectal lesions, or second, usually affect the entire colon from rectosigmoid to cecum. The removal of part or all of the large bowel for chronic ulcerative colitis is definitely desirable when the colon has lost its function and becomes a focus of absorption.

"2. Surgery in the acute, fulminating or hemorrhagic forms of ulcerative colitis has few, if any, advantages. In this type of condition, ileostomy which completely by-passes the fecal current may be done under local anesthesia and occasionally appears to accomplish something.

"3. Operations for colectomy, total or subtotal, should be carried out in multiple stages. Multiple stage operations increase the margin of safety enormously and sufficient time after performance of ileostomy should be allowed to elapse before resection is undertaken, to replace fluid loss, balance the blood chemistry, and increase body weight and strength.

"4. Mortality statistics, following colectomy, parallel statistics for surgery of other major lesions of the colon.

"5. The treatment of chronic ulcerative colitis is predominantly medical and no operation should be attempted until all other efforts have proved futile. But when surgery is undertaken, it should be only after adequate and prolonged preoperative preparation and rehabilitation."

LeRoy D. Long.

Urologic Complications Following Complete and Supravaginal Hysterectomy: A. J. Murphy; American Journal of Obstetrics and Gynecology; February, 1939, Vol. 37, No. 2, page 201.

This is a study of the urologic complications following complete and supravaginal hysterectomy at the Woman's Hospital in New York City during the past eight years. It was undertaken largely because of the increasing number of advocates of routine complete hysterectomy and because of the fact that during the last eight years there had been 438 complete hysterectomies, whereas in a period of the same duration from 1922 to 1929 there were only 223 such operations in the Woman's Hospital.

During the last eight years at the Woman's Hospital there were performed 1,229 supravaginal operations while during the same time 438 complete hysterectomies were done. Forty-seven of the supravaginal operations were complicated by an acute postoperative pyelonephritis and 47 of the complete hysterectomies had a similar complication or three times as many as in the supravaginal series.

In the supravaginal group of 1,229 operations,

there were only three ureteral traumatic complications and the bladder was accidentally opened while separating it from the anterior surface of the uterus in two patients. In all of these the injury was recognized and repaired with no additional trouble.

In the series of complete or total hysterectomies, numbering 438, the bladder was accidentally opened twice and there were ten serious urological complications. Of these, four patients had left ureterovaginal fistula resulting in one death, one nephrectomy, destruction of function of one kidney by radiotherapy and one patient unable to be traced but probably requiring nephrectomy in order to be cured.

The right ureter was divided in three patients. In these three, repair was made at once and they had an uneventful postoperative recovery.

There were three vesicovaginal fistulas. The three were operated upon within four months and cured of their fistulas.

Three patients were readmitted to the hospital with an acute pyelonephritis.

It was, therefore, shown in this study that acute postoperative pyelonephritis was three times more frequent following complete hysterectomy. However, it was noted in their cases that such infections were not as serious after complete hysterectomy as those which developed after the supravaginal operation.

"In this series of cases ureteral and bladder injury was ten times more frequent following complete hysterectomy." "The seriousness of unrecognized ureteral injury with late renal complications cannot be minimized."

The author concludes that routine complete hysterectomy is not advisable because of the greater frequency of urinary infection and ureteral and bladder injury.

Comment: This study is an important one principally from the standpoint of demonstrating the fact that serious urinary tract infections and injuries occur more frequently with total or complete hysterectomies than with the supravaginal operation.

Despite the arguments of the advocates for routine total or complete hysterectomy, it is the general feeling among gynecologists that suprevaginal hysterectomies will meet the requirement for operative procedure in the greatest number of patients needing hysterectomy. The choice of the complete or total hysterectomy over the supravaginal procedure rests entirely in the condition of the cervix, the general health of the patient as an operative risk, and the experience of the individual operator in the two procedures. In other words, the election of complete hyserectomy in preference to the supravaginal procedure is an individual matter with each patient and each surgeon.

Upon the basis of this report and the experience of most pelvic surgeons there can be little doubt that the urinary complications are more frequent and serious after complete hysterectomy. This does not mean that complete hysterectomies should not be elected in spite of this additional risk when the cervix is in such condition that the risk of subsequent malignancy is probably far greater than the operative risk incurred.

Wendell Long.

Bartholinitis and Skeneitis Due to Trichomonas Vaginalis: H. A. Shelanski and Saul P. Savitz; American Journal of Obstetrics and Gynecology; February, 1939, Vol. 37, No. 2, page 294.

These authors discovered that fresh smears taken from the glandular secretions of Bartholin's and Skene's glands in patients who had recurrent attacks of trichomonas vaginalis vaginitis were positive for vaginal trichomoniasis.

"The clinical picture is typical and in most cases resembles gonorrheal bartholinitis or skeneitis. However, some of the cases show only a slight swelling of the labia and are not quite as inflamed or edematous as are the gonorrheal cases."

Their recurrent cases demonstrating trichomona infestation of Bartholin's and Skene's glands were treated by injecting the glands with one cc. of one per cent aqueous solution of silver picrate. They found that two injections cleared the infestation in seven patients and that one patient required four injections while another required the maximum of five injections. The injection of the glands was followed by the silver picrate treatment for vaginal trichomoniasis.

In two patients the Bartholin glands were excised.

Each patient was observed for a period of four months after the last treatment and at the end of that time all were found to be negative.

The discussion and conclusions of the authors are quoted below because of their importance in the proper recognition and treatment of the resistant recurring instances of trichomonas vaginalis vaginitis.

"One of the outstanding obstacles in treating trichomonas infestations in the vaginal tract is reinfestation, for which several explanations have been suggested such as:

"1. Reinfestation from the male.

"2. Recurrence due to the organisms in the cervical plug of mucus.

"3. Infestation of the glands of Bartholin and Skene.

"4. Contaminated plumbing fixtures on which organisms will remain viable for as long as 24 hours if kept moist.

"5. Reinfestation from the bladder or urethra.

"Silver picrate has been used in the treatment of trichomonas vaginalis and has been shown to be highly germicidal to this organism in vitro. Thus its use in trichomonas bartholinitis and skeneitis is an extension of these former investigations."

Conclusions:

"Trichomonas vaginalis has been demonstrated in Bartholin and Skene's glands, and is a specific factor in producing bartholinitis and skeneitis.

"2. The presence of trichomonas vaginalis in these glands demonstrates that they act as foci of infestation. These glands, therefore, are one source of constant reinfestation in recurrent cases of trichomonas vaginalis vaginitis.

"3. Injection of the glands with one per cent solution of silver picrate has been found to be a satisfactory treatment for this infestation."

Comment: I have seen several patients who had an infestation of Skene's and Bartholin's glands which apparently caused reinfestation of the vagina with recurrence of the symptoms. These patients responded well when the infested areas were properly treated. This article also bears upon the very practical subject of both non-specific Bartholinitis and Skeneitis as well as a cause for reinfestation in some of the persistent recurring instances of trichomonas vaginalis vaginitis.

It has been our practice for a number of years to use the pentavalent arsenicals rather than silver picrate in the treatment of this disease.

This method has been satisfactory and silver picrate has, therefore, not been employed extensively by us. Wendell Long.

Selective Surgery in Operable Rectal Cancer: George E. Binkley; The American Journal of Surgery; January, 1939, page 51.

There is no one operative procedure that is suitable for routine employment in all cases. Two fac-

tors, one the variation in the extent of disease at the time patients are referred for treatment, and two the variation in the ability of patients to withstand radical resection, make selective surgery preferable to the routine use of any one method.

The two types of operation that have proven of greatest value and appear worthy of consideration in selecting treatment for operable diseases are: (1) abdomino-perineal resections completed in one or two stages; and (2) perineal resections with or without preliminary colostomy. Each of the above procedures has a field of usefulness in the surgical treatment of this disease. Most appropriate selection can be made from the knowledge of the comparative advantages and limitations of each procedure, the pathologic factors of the disease presented, and the general physical condition and the psychology of the patient.

If it were possible to obtain patients for operation in the early incipient stages, treatment would be greatly simplified and excellent results obtained by the majority of the above methods of procedure. Unfortunately, many operable lesions are well established and extensive at the time patients come under observation. The extent of the disease has a marked bearing upon the prognosis. The ability of patients to withstand operation must be very carefully considered. Combined abdomino-perineal resection is accompanied by greater degree of shock and more severe complications than perineal resection. In the treatment of cancer of the rectum, it is advisable to employ the most radical dissection that the patient appears able to withstand, since one is never positive of the extent of the disease.

The problem of selecting treatment is a comparatively simple one when dealing with patients in good physical condition. Unfortunately, rectal cancer usually occurs in patients of mature and old age. Many of these patients are also victims of heart, lung, kidney, metabolic, or other chronic diseases, factors which greatly increase the hazards of successful resection. It is impossible to treat rectal cancer adequately without a certain percentage of operable fatalities. The latter, however, may be held at a reasonably low figure by attempting to keep the treatment within the tolerance of the patient and at the same time to afford him the benefit of the most radical resection that he is able to withstand. In recent years operable mortality, following all types of resections, has been lessened by more careful preoperative preparation, by liberal employment of blood transfusions, better surgery and more detailed after treatment.

Abdomino-perineal resection is considered the ideal surgical method of approach in eradicating rectal and rectosigmoidal cancers. Unfortunately, it must be reserved for good surgical risks. Making this procedure a two-stage affair allows one to accept for operation patients who are not in quite as good shape. Nevertheless, even for a two-stage type of abdomino-perineal resection the general condition of the patient must necessarily be fairly good. It is this fact (which the author does not mention) which has caused me to become less enthusiastic about abdomino-perineal resections. Also it has been repeatedly demonstrated (particularly by Lockhart-Mummery) that a large amount of gland-bearing tissue can be removed with perineal excision. Lockhart-Mummery's cases of perineal resection compare favorably with cases of abdomino-perineal resection by Miles and others. The operative mortality in any surgeon's hands is at least 50 per cent less with perineal excision than with combined abdomino-perineal excision. (Dr. Binkley gives an operative immediate mortality of 12.5 per cent for abdomino-perineal whereas he has a mortality of five per cent for perineal excision.)

However, it must be admitted that from the standpoint of obtaining clinical cure that perineal resections are best suited for cancer within the lower half of the rectum in which the disease is well localized.

Selective surgery in operable rectal cancer is advisable because of variations in (1) the location of lesions, (2) the extent of the disease, and (3) the physical condition of the patient. If the patient is a good surgical risk, abdomino-perineal resection, completed in one or two stages, probably affords the widest form of dissection, and is to be preferred for that reason.

Perineal resections, with or without preliminary colostomy (preferably with preliminary colostomy), are best suited for tumors situated in the lower two-thirds of the rectum in patients classified as only fair or poor surgical risks.

Resections which attempt continuity of bowel and sphincter control have not proved to be very satisfactory in the treatment of rectal cancer. Perineal anus is less satisfactory than permanent abdominal colostomy. Procedures such as local excision, perineal resections with preservation of the anal sphincter, and abdominal resections with anastomosis, are employed in an effort to avoid a permanent artificial anus. Any of these procedures is probably unsatisfactory in most cases and it certainly lends to increase in recurrences because they may result in incomplete removal of the cancer.

LeRoy D. Long.

EYE, EAR, NOSE AND THROAT

Edited by Marvin D. Henley, M.D.
911 Medical Arts Building, Tulsa

The Fluid Equilibrium of the Body and Its Relation to the Eye. J. Douglas Robertson, M.D., London. The British Journal of Ophthalmology, February, 1939.

There is a discussion and definition of the vascular and lymphatic systems and the tissue spaces. The interchange between these systems include a passage of gases, water, inorganic salts, organic crystalloids, and in certain tissues colloids.

Factors which normally play a part in the distribution of fluid throughout the body are:

1. Hydrostatic pressure in the capillaries.
2. Colloid osmotic pressure of the plasma.
3. The pressure of fluid in the tissues.

Methods of upsetting the fluid equilibrium of the body are discussed. Experiments are given and "the conclusions drawn are that the eyes does not share in the water-logging common to other tissues of the body. The equilibrium level of the intra-ocular pressure is not maintained by the hydrostatic pressure in the capillaries minus the difference in osmotic pressure between the aqueous humour and the blood."

Further experiments proved that the eye does not behave as a simple fluid depot as do connective tissue spaces, and the aqueous humour does not appear to be formed by the same process as the tissue fluid.

Evidence that the aqueous humour does circulate is supported by observations of Priestley Smith, Friedenwald and Pierce and three pertinent examples are given.

Discussion is given as to the site of formation of the aqueous humour and also the site of removal of the aqueous humour.

This appears to be a very valuable contribution to ophthalmological research and must have entailed an incalculable amount of work.

The author's own conclusions are:

1. The formation of the aqueous humour is not

governed by the same simple laws that govern the lymph, pleural and peritoneal fluids and other dialysates. Dialysis is therefore not a satisfactory explanation of the production of the aqueous humour.

2. When the osmotic equilibrium in the body is disturbed in various ways the fluid formed in the stomach and the eye are disturbed rather similarly. This suggests that a secretory process in the eye may play some part in controlling the intra-ocular pressure.

3. Ample evidence is available that the aqueous humour circulates from the posterior to the anterior chamber.

4. Evidence seems to point to the site of formation of the aqueous humour being in the ciliary process.

5. The aqueous humour leaves the eye at the angle of the anterior chamber into Schlemm's canal by some process which is not osmosis, and no fluid can leave the eye normally by the posterior chamber.

Late Results in Retinal-Detachment Operations. Dohrmann K. Pischel, M.D., San Francisco. American Journal of Ophthalmology, February, 1939.

The article is opened with a discussion of Weve's results in his operations at the Utrecht Eye Clinic. F. Ramach's results at Linder's Clinic in Vienna are also discussed. These reports do not give the findings at the end of a certain period as found on re-examination post-operatively.

The author's thought was what late results followed such a radical surgical insult as the eyeball suffered during a diathermy operation. He lists seven possible untoward late results: reappearance of the retinal detachment, degeneration of the macula, atrophy of parts of the retina, optic atrophy, scleral ectasia, troublesome hyperphoria and most important of all development of cataract.

Sixty-three patients are reported who had been operated at least a year. Of these 37 or 58 per cent were considered successful. Only 32 of these could be found for examination.

The safer method of multiple diathermy puncture was used in all cases. Patients were kept in bed for two weeks after operation. The earlier cases operated had only one line of pins inserted; later cases had double rows and transcleral treatment or application of bident electrode. Stenopeic spectacles were worn for two months.

In regard to the reappearance of the detachment he shows four cases in which the detachment recurred within three months of operation; the second operation was successful in all four cases. Another patient was operated three times before a cure was effected. In the author's opinion if a case remains cured three months, there is no danger of further relapse.

There was not any late degeneration of the macula found; no late atrophy of the retina was noted; there was no ectasia of the sclera noted.

Troublesome hyperphoria is reviewed in 16 cases where there was a complete tenotomy of a vertical rectus. He says this condition "never develops as a result of a complete tenotomy of a vertical rectus (with muscle resutured to insertion), when only one operation is undertaken. A slight hyperphoria may develop without tenotomy, due to the formation of scar tissue."

Considered the most important late development of all is cataract. The author's analysis showed only one case of cataract which developed in previously uninjured lenses; three cases of traumatic complicated cataract showed an increase in density of the lens opacity, as did one of complicated cataract.

Ruling out cataracts, vision was retained, when regained.

The time element on these cases showed: Four cases of more than four years' standing; five of more than three years' standing; six of more than two years' standing and 18 of more than a years' standing.

Incidence of Malignant Tumors of the Head and Neck. Noah D. Fabricant, M.D., Chicago. Archives of Otolaryngology, January, 1939.

This is a statistical survey of malignant tumors (confirmed microscopically) of the head and neck which occurred in the Department of Otology, Rhinology, and Laryngology of the University of Illinois College of Medicine during a period of seven years from July 1, 1930, to July 1, 1937. These were gleaned from 1,103 biopsies. Uudoubtedly there were more malignancies than this during the stated interval since there are approximately 2,500 patients admitted per annum but only proven cases are reported.

The youngest patient was a boy of 17 years; the oldest was a man of 85 years. A total of 87.37 per cent occurred in men; 12.63 per cent occurred in women (seven times as frequent in men as in women). This ratio the author thinks is of significance, since an analysis of 250 malignant tumors in Cook County Hospital showed 88.4 per cent in men and 11.6 per cent in women.

Most investigators show the incidence to be greatest in the fifth decade with the fourth and sixth decades in the second place. This survey shows most malignancies occurring during the fifth decade, then the sixth and fourth decades, respectively.

The survey shows a two-page chart of the anatomic site and type of tumor. This shows the majority of malignancies occur in the larynx; next in numerical significance is the nose and paranasal sinuses; respectively then follows the esophagus, tongue, bronchi and tonsils.

Seventy per cent of the total number (249) were squamous cell; 8.7 per cent were basal cell carcinomas; 2.7 per cent were transitional cell carcinomas; 2.7 were undifferentiated tumors and 2 per cent were adeno-carcinomas.

"The heavy predominance of squamous cell carcinoma is manifested by the fact that 95 per cent of the tumors invading the larynx, almost 97 per cent of those invading the esophagus, 100 per cent of those invading the bronchi and the tongue, 55 per cent of those invading the bronchi and the neck and 90 per cent of those invading the tonsils were of this type."

Bronchoscopic and esophagoscopic examinations are necessary.

The Treatment of Acute Nasal Accessory Disease. A. C. Furstenberg, M.D., Ann Arbor, Michigan. Annals of Otology, Rhinology and Laryngology, December, 1938.

"The only generalization, which seems accurate about the treatment of acute nasal accessory sinus disease is that an inordinate variety of methods are in practice and that no specific cure, either medicinal, surgical or biological, has yet been discovered."

This is a confusing subject to the medical student as well as to the one who has been graduated many years. Furstenberg aptly sums it up in the above paragraph. Eminent authorities differ to an extreme degree on the method of treatment. Furstenberg admits the lack of knowledge on the subject by discussing in particular the negative phases of the disease and the things not to do.

In the Department of Otolaryngology, University of Michigan, there is no bone work done during

the course of any acute infection. Condemned is the use of irritating solutions, such as silver salts, colloidal preparations, mercurochrome, etc., suction, tamponade or surgical intervention. Conservative methods are employed such as might be used in any infection. These include: rest, promotion of drainage (steam inhalations, unmedicated, and three per cent aqueous solution of ephederine sprayed in nose or dropped in nasal cavity according to the Proetz method), relief of pain (morphine and codeine), hydration and nutritional support of the patient. The argument given against irrigation is that frequently there is a pansinusitis and irrigation of, say a single antrum, is a futile gesture. Hot and cold applications are thought by Furstenberg to be of doubtful value.

In the "mine-run" of complications that appear in this clinic are osteomyelitis, orbital cellulitis, blood stream infections, etc. It was noted that the one who had such a complication gave a history of some surgical manipulation at some recent date before appearing at the clinic. Patients hospitalized by the clinic early in an acute sinusitis and treated conservatively as outlined did not develop such sequellae.

A series of 300 cases were observed. History, clinical examination and radiographic study showed them to be acute nasal accessory sinus infections. The conservative treatment was used. They were hospitalized for a period of one week, the first five days of which were spent in bed. Six months to two years later check-ups were done on this group; 296 were asymptomatic; four showed a chronic maxillary sinusitis, but gave history of an exacerbation with surgical intervention since they had left the hospital.

There is an account given of the experiments of the effect of mucin. Furstenberg thinks that when bacteria are suspended in a menstruum of mucin, they become most destructive invaders of the animal host.

Furstenberg says: "After taking into account the possibilities of error in diagnosis, the vagaries and fallacies of statistical computations, not to mention the whims and prejudices of observers, we are still forced to the conclusion that utmost conservatism as the treatment of acute nasal accessory sinusitis is worthy of avowed recommendation by members of our profession."

INTERNAL MEDICINE

Edited by Hugh Jeter, M.D., 1200 North Walker, Oklahoma City

Studies on Trichinosis—XII The Preparation and Use of An Improved Trichina Antigen; by John Bozicevich. From the Public Health Reports, Vol. 53, No. 48, December 2, 1938, pg. 2130-2138.

In connection with a series of studies carried on in the Division of Zoology, the National Institute of Health, of the United States Public Health Service on various aspects of trichinosis, an attempt was made to effect improvements in the preparation of trichina antigen in order that more reliable results might be obtained in the diagnosis of trichinosis by the precipitin and intradermal tests.

The author describes various methods for the recovery of trichina larvae with a minimum of debris, and for the preparation of trichina antigen by extraction with a neutral 0.85 per cent solution of sodium chloride without the use of preservatives. Such antigen may be put up in hermetically sealed vials and stored at room temperature until needed for use.

A convenient method for measuring intradermal reactions is described. The progressive development of the reaction is followed by means of cellophane tracings which can afterwards be measured by means of a planimeter. By this method a progressive graphic picture of the reaction may be preserved for further reference.

The author concludes that the saline extracted antigen is superior as a diagnostic agent to other types of antigen.

Studies on Trichinosis—VII. The Past and Present Status of Trichinosis in the United States, and the Indicated Control Measures; by Maurice C. Hall, Chief, Division of Zoology, National Institute of Health, United States Public Health Service. Public Health Reports, Vol. 53, No. 33, August 19, 1938, pages 1472-1486.

Since 1936 the Division of Zoology, National Institute of Health, United States Public Health Service, has undertaken a study of trichinosis in the United States. On the basis of this study the author has arrived at some definite conclusions. They are:

1. Abundant evidence indicates quite clearly that trichinosis is probably a greater problem in the United States than in any other country in the world.

2. Human trichinosis rests primarily on the basis of swine trichinosis.

3. Swine trichinosis rests primarily on a basis of uncooked or inadequately cooked pork scraps fed to swine in garbage, table scraps, swill and similar material.

4. The indicated control of trichinosis in the United States is primarily a matter of keeping such uncooked pork scraps out of the feed of swine and either cooking such feed as garbage or refraining from feeding any food containing pork scraps.

5. Rats appear to have a very minor roll in the production of porcine trichinosis.

6. The incidence of trichinosis in man has not been lowered during the past 50 years.

7. Prompt action looking towards the control of trichinosis is imperative for the protection of the public health on the one hand and the protection and improvement of the swine industry and the packing industry on the other hand.

The author discusses the prevalence of trichinosis in the United States 50 years ago and has compared it to the incidence of trichinosis today. In addition he presents the incidence of trichinosis in European countries as compared to that of the United States. In this discussion the author states that the lowest of the recent figures for the United States is higher than all but one of the European figures cited.

Further, the author discusses the effectiveness of previous control measures, the prevention of trichinosis in swine and outlines the organization of a program for the control of human trichinosis.

PLASTIC SURGERY

Edited by
GEO. H. KIMBALL, M.D., F.A.C.S.
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Plastic Surgery in Children. The Medical and Psychological Aspects of Deformity. Claire L. Straith, M.D., and E. Hoyt De Kleine, M.D., Detroit. Journal of American Medical Association, December 24, 1938, Vol. 3.

The past two decades have brought forth intenseive campaigns in behalf of crippled and otherwise physically handicapped children of this

country. Equally serious, but less widely publicized, are the childhood handicaps that are the results of deformity. By "deformity" we refer to those visible abnormalities which handicap their victims because of a peculiar appearance.

As examples of this group, the authors cite, harelip and cleft palate, facial birthmarks, saddle nose, hunchback, webbed fingers, crossed eyes, ptosis of the eyelid, disfiguring scars, lop ears, crooked teeth and contractures resulting from burns. Many of these congenital deformities and others are acquired during childhood. Of the acquired deformities, many might have been minimized at their onset or might have been prevented. In addition to efforts at prevention, the greatest service to such children is the work being done in the correction of such defects by plastic surgery. Plastic surgeons must of course give due credit to the achievements of orthopedists, dentists, ophthalmogoligists, and dermatologists, whose efforts have made many other deformities amenable to treatment.

Although the effects of deformity are largely psychologic, the ultimate responsibility for their management generally falls on the shoulders of some physician. It is for these physicians that we present this summary of the pertinent facts relating to childhood deformities. Let it be said at the outset that we are not professional psycologists. We are primarily surgeons interested in the correction of these deformities and our discussion on psychology is derived from personal experience in the management of such cases.

The authors list three psychologic effects of deformity:

1. Inferiority and Shame: Children are notoriously observant of the unusual. A great deal of undue attention is invariably directed at any cosmetic abnormality possessed by a playmate. They do not attempt to refrain from remarking about the afflicted companion. Sometimes he is nicknamed to suit the deformity. It is no wonder then that the majority of children quickly develop a feeling of inferiority and shame. As the child matures he becomes increasingly more sensitive.

2. Modifications of Self Expression: Lowery tells us that personality depends on two fundamental drives. The one is for self-expression and the other for conformance with accepted social standards. When this is applied to the deformed child, the result is obvious. The deformed child may have every mental and physical faculty for self-expression possessed by other children but because of his deformity he is either restrained by others or avoids the personal contacts necessary for such expression. Activities are either shunned or altered.

3. Anti-social Tendencies: Before a handicapped child can gain recognition of the group he must first overcome the tendency of other children to maintain the natural impression of abnormality and undesirability. Many unfortunates are inclined to give in to these difficulties and to make no effort to become one of the group. Others become resentful, blame is placed on all manner of circumstances and people. These children may develop objectionable social behavior, may resort to criminal tendencies and activities, etc.

The rarely spontaneous reaction occurs when the handicapped child sets out to make himself popular regardless of obstacles. This is a goal toward which mental therapy should be aimed when dealing with handicapped children.

Surgical Care of Deformities

1. Prevention: Very little is known about the prevention of congenital deformities. Acquired deformities on the other hand are largely preventable through safety measures. However, once an injury capable of producing a deformity has been inflicted, the preventive measures employed are entirely dependent on the resources of the physician responsible for its care.

Accidental injuries to the face lead the list of acquired deformities. The authors relate the necessary management of such cases.

2. Earliest Possible Correction: When a deformity of any type of severity is present the most important single item in the avoidance of undesirable personality changes is the most complete surgical restoration possible at the earliest date that is feasible. This is a hard and fast rule with no exceptions of which we are aware.

It is of particular importance to have deformities corrected if possible before the child enters school.

3. Management of Common Deformities: Among the congenital deformities there is a group which allows correction immediately after birth. Most conspicuous of these are the harelips. In the absence of specific contraindications to surgery, harelip should be corrected during the first week of life. With paregoric for premedication this repair can be safely and efficiently performed with a simple nerve block anesthesia. We have performed such surgery within 24 hours after birth, often with the child sleeping through the operation.

Cleft palates, we feel, should not be operated before the child is from 18 to 21 months of age, the authors state. Earlier than that the palatal tissue is too flimsy to permit adequate repair without tearing. Prevention of speech defects is the paramount aim, and, since most children begin to talk at about two years of age, this is the age choice for surgery of the cleft palate. Even after a satisfactory anatomic repair, speech training with hours of patient practice is required to insure a satisfactory speaking voice. In certain cases in which there is difficulty due to shortness of the palate, the Dorrance "push-back" operation may be performed to give the palate its needed length.

Plastic surgery involving the legs or abdomen must usually be delayed until the child passes the diaper age because of the danger of infection. This includes the use of skin or fascial grafts taken from the lower part of the abdomen and the upper part of the thighs.

The authors list a number of very common and very annoying deformities and use some very fine illustrations of each type. The authors are to be commended on the results shown by their procedure. Some of those listed and explained are, lop ears, nasal deformities, cleft palates, harelips, saddle nose, hump of nose, automobile injury to face, web fingers, contracture of axilla from burns, etc.

Development of Sound Mental Health

Surgical correction in early childhood is the most valuable method of preventing undesirable personality traits. Unfortunately early correction of the deformity in some instances is impossible; in others it is impossible to obtain a perfect cosmetic result. Theraphy, therefore, must often be supplemented by special training to prepare the child for his handicap. This so-called "special" training is really not special in any sense of the word. It is the same training that might be recommended for any normal child, with emphasis on certain aspects which are most important to the deformed child.

First, the deformed child must learn to "face the facts." He must learn to anticipate difficulties and to be self-reliant.

Second, the handicapped child is most likely to be deprived of many things commonly sought after for their supposed value; for example, money, friends, esteem, beauty, amusements and romance. Parents of such children should make every effort to help them readjust their sense of values. Above all, the children must learn that true friendship

exists only in those who like them in spite of the deformities and irrespective of their possessions or ability to do something to buy their favor.

Thirdly, compensatory education and importance of speech training for children with cleft palate is almost as important as the surgical repair. Physical therapy and gymnastics are important for children with orthopedic deformities, and contractures from burns, after correction, frequently require muscular rehabilitation. It is known that crossed eyes are greatly improved by exercises to develop the use of extra-ocular muscles.

Summary:

1. Deformities in children are serious and have failed to attract adequate attention within the medical profession. The seriousness lies in the severe mental reactions and alterations of personality which result.
2. Many of the acquired deformities are preventable and the technical information regarding this phase of preventive medicine should be more widely publicized among medical schools and medical organizations.
3. Wherever possible childhood deformities should be corrected before the child reaches school age, and a few are best corrected within the first week of life.
4. Many childhood deformities have become amenable to plastic surgery with the development of that specialty which has taken place since the World War.
5. In addition to surgical care, deformed children require more than ordinary "bringing up" at home and at school. They must be prepared to face greater hardships than normal persons and should be given special training to compensate for altered facilities for self-expression.

Comment: Dr. Straith is to be congratulated on a very comprehensive article pointing out the complexes which may develop in some of the congenital anomalies. Men doing plastic surgery encounter these complexes often.

It is remarkable how they can be completely relieved by operation. The illustrations show that Dr. Straith is doing outstanding work in this field.

UROLOGY

Edited by D. W. Branham, M.D.
514 Medical Arts Building, Oklahoma City

The Influence of Sulfanilamide on Gonococci and Gonococcal Infections. Russell D. Herrold, M.D., and Edward Palmer, M.D., Chicago, Illinois. Reprinted from American Journal of Syphilis, Gonorrhea and Venereal Diseases, November, 1938.

This report presented by a careful observer seems to present an accurate picture of the present day status of sulfanilamide therapy for the treatment of gonorrhea. Unlike the majority of papers presented the past year on this remarkable drug the authors have not had the 84 per cent average of successful cures reported by other investigators. However, their standards of evaluation have been more strict than those who have previously reported on the drug.

They are of the opinion that if the drug produces eradication of the gonococci under a period of 30 days, a successful result has been obtained. If complications are presented and are promptly controlled, even though benefit is not gained within a short period of time, it should be considered partially satisfactory. In a total of 89 cases a satisfactory result was obtained in approximately one-third and a partially satisfactory result in another one-third. No results or poor results were obtained in the remaining one-third of cases studied.

Other observations made on this form of therapy were; patients who previously had the disease showed better result than those with initial infections—also better results were obtained the earlier the drug was used in the course of the disease. In a substantial percentage of patients a latent or carrier state has been found to exist for long periods of time. Local treatment of the infected urethral and glandular structures is a valuable therapeutic adjunct and will aid in expediting cure.

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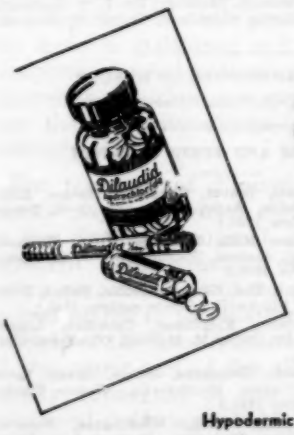

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